CLAIMS

1. A method for treating a surface of at least one substrate, wherein the at least one substrate is placed in a process chamber, wherein the pressure in the process chamber is relatively low, wherein a plasma is generated by at least one plasma source, characterized in that, during the treatment, at least one plasma source (3) and/or at least one optionally provided treatment fluid supply source is moved relative to the substrate surface.

2. A method according to claim 1, characterized in that the plasma source (3) and/or the optional treatment fluid supply source is rotated about at least one rotation axis (14, 15), which axis (14, 15) extends substantially parallel to the substrate surface.

3. A method according to claim 1 or 2, characterized in that the plasma source (3) and/or the optional treatment fluid supply source is moved in a direction towards the substrate surface or away from it.

4. A method according to any one of the preceding claims, characterized in that the plasma source (3) and/or the optional treatment fluid supply source is moved in at least one lateral direction relative to the substrate surface.

5. A method according to any one of the preceding claims, characterized in that the plasma source (3) and/or the optional treatment fluid supply source is rotated about an axis extending perpendicularly relative to the substrate surface.

6. A method according to any one of the preceding claims, characterized in that a treatment fluid is added to the plasma, in particular for the purpose of PECVD.

7. A method according to claim 6, characterized in that the amount of treatment fluid to be added to the plasma is related to the movement of the at least one plasma source (3).

8. A method according to claim 6 or 7, characterized in that the plasma source is a cascade source (3), wherein a treatment fluid is supplied into a prechamber (6) of the cascade source (3), near a cascade source cathode (4) present in this prechamber (6).

9. A method according to at least claim 6 or 7, characterized in that, between the at least one plasma source (3) and the substrate surface, at least one treatment fluid supply source (9) is arranged to add the treatment fluid to the plasma.

10. A method according to claim 9, characterized in that, during the treatment, the at least one treatment fluid supply source (9) is moved relative to the substrate surface, wherein the movement of the treatment fluid supply source (9) is related to the movement of the at least one plasma source (3).

11. A method according to any one of the preceding claims, characterized in that the at least one plasma source (3) is moved such that each part of the substrate surface undergoes substantially the same extent of treatment, in particular in that each part of this surface is reached by the same amount of plasma.

12. A method according to any one of claims 1-10, characterized in that the at least one plasma source (3) is moved such that at least a first part of the substrate surface undergoes substantially a greater extent of treatment than a second part of this surface, in particular in that the first surface part is reached by a larger amount of plasma than the second surface part.

13. A method according to any one of the preceding claims, wherein said plasma source (3) is mounted on the process chamber.

14. A method according to any one of claims 1-12, wherein said substrate is provided with at least one cavity at least partly bounded by said substrate surface, wherein, during treatment, at least a part of said plasma source and/or at least said treatment fluid supply source is and/or has been introduced into said substrate cavity.

15. A method according to any one of the preceding claims, wherein, during the treatment, said plasma source (3) and/or treatment fluid supply source carries out at least one three-dimensional movement.

16. An apparatus for treating a surface of at least one substrate, wherein the apparatus is provided with a process chamber and at least one plasma source, characterized in that the at least one plasma source (3) and/or at least one optionally provided treatment fluid supply source is movably arranged.

17. An apparatus according to claim 16, characterized in that the plasma source is a cascade source (3), wherein at least one cathode (4) of the cascade source (3) is present in a prechamber (6) in which, during use, a relatively high pressure (P2) prevails compared to a pressure (P1) prevailing in the process chamber (1), wherein, via a relatively narrow channel (7) bounded by mutually electrically insulated cascade plates (8), the prechamber (6) opens into the process chamber (1), such that, during use, the plasma extends via the relatively narrow channel (7) into the process chamber (1).

18. An apparatus according to claim 16 or 17, characterized in that the apparatus is provided with resilient means (11) arranged to exert such a spring force on the at least one plasma source (3) that, under the influence of this spring force, the plasma source (3) can move to a starting position when the plasma source (3) is not in this starting position.

19. An apparatus according to any one of claims 16-18, characterized in that, between the at least one plasma source (3) and the process chamber (1), a flexible, substantially gastight sealing is provided.

20. An apparatus according to any one of claims 16-19, characterized in that the apparatus is provided with a first housing part (16) and a second housing part (17), wherein the at least one plasma source is provided on the first housing part (16), wherein the first housing part (16) is coupled to the second housing part (17) in a substantially gastight and movable manner, in particular by a thin-walled stainless-steel bellows (11).

21. An apparatus according to any one of claims 16-20, characterized in that the apparatus is provided with at least one motor (12, 13) for the purpose of moving the at least one plasma source (3).

22. An apparatus according to any one of claims 16-21, characterized in that the at least one plasma source (3) is arranged so as to be rotatable about at least one first (14) rotation axis and one second rotation axis (15), wherein the first and second rotation axis (14 and 15 respectively) each extend substantially parallel to the substrate surface and in a different direction.

23. An apparatus according to any one of claims 16-22, characterized in that the process chamber (1) is provided with at least one treatment fluid supply source (9) to add a treatment fluid to the plasma, in particular for the purpose of PECVD.

24. An apparatus according to at least claim 17 and 23, characterized in that the at least one treatment fluid supply source (9) is arranged to add treatment fluid to the plasma extending via each relatively narrow cascade source channel (7) into the process chamber (1).

25. An apparatus according to claim 23 or 24, characterized in that the at least one treatment fluid supply source (9) is provided with at least one plasma passage through which the plasma extends during use.

26. An apparatus according to any one of claims 23-25, characterized in that the at least one treatment fluid supply source (9) is movably arranged in the process chamber (1).

27. An apparatus according to claim 26, characterized in that the at least one treatment fluid supply source (9) is coupled to the at least one plasma source, such that the movement of the at least one treatment fluid supply source (9) is related to the movement of the at least one plasma source (3).

28. An apparatus according to any one of claims 16-27, wherein said plasma source is mounted on the process chamber.

29. An apparatus according to any one of claims 16-28, wherein said plasma source and/or at least said treatment fluid supply source are arranged to carry out one or more three-dimensional movements.

30. An apparatus according to any one of claims 16-29, wherein the apparatus is at least arranged to carry out PECVD.

31. A substrate provided with a surface with at least one layer of material deposited on it, characterized in that the layer has been deposited using a method according to any one of claims 1-15 and/or using an apparatus according to any one of claims 16-30.